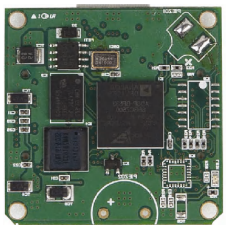
IRIS MODULE

Iris Recognition Module

Iris recognition module consists of iris recognition camera and processing board. It supports the best 1:1 and 1:N authentication rate with high speed MOU and optimized iris recognition algorithm and is designed for access controller and various application. Iris module makes users to develop embedded product without integrating with PC and provides convenient development environment.

Iris Two Eye Module

Iris One Eye Module



Features

- Embedded Type of Iris Recognition Module(40mm x 40mm)
- Versatile and minimized to fit for access-control system development
- All processes such as iris image capture, template enrollment, authentication are executed in the module.
- Setting threshold value available
- Saving users templates on embedded flash memory

Application

- Access Controller
- e-Time and Attendance System
- PC/Server Security Log-In, Iris Recognition Mouse
- Time & Attendance Management
- Home Security, Door-lock, Safe
- POS System, Identification System for Financial and Medical Insurance Industry
- E-payment Integrating with SSO,ERP

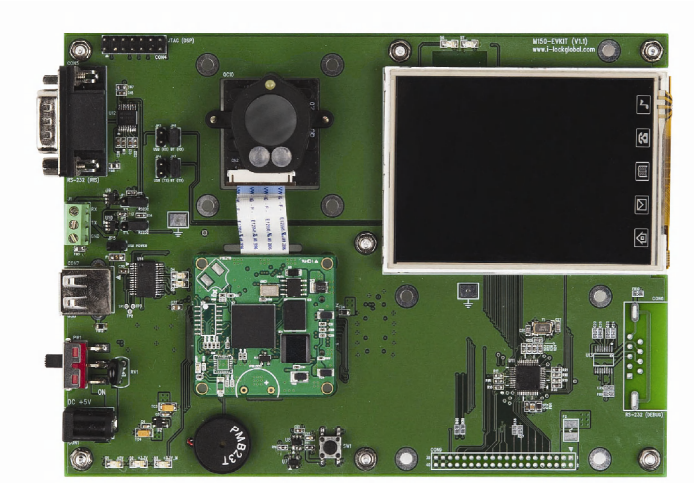
Specification

Item	IM10	IM20
CPU	Exynos(1.4GHz)	Falco-S(860MHz)
Template Capacity	10,000	10,000
Iris Data Size	256byte	256byte
Enrollment Time	2 sec	2.5 sec
Authentication Time	1 sec	1.5 sec
Interface	UART, USB, i2c	UART, USB, i2c
Power Consumption(Ma) (Action/Standby)	Sleep Mode: 10mA, Normal Mode : 300mA	Sleep Mode
Supply Voltage	core 1.2V, IO 1.8-3.3V	core 1.3V, IO 1.0V
Operating Environment	Android	Linux
Log Data Storage Capacity	NAND 50MB, SD 8G	50MB, SD 8G
Iris Sensor	F-HD	F-HD
Size	42 x 23 mm	40 x 45 mm

※ This specification is subject to be changed without prior notice .

Iris Module
Evaluation Kit
Iris Recognition Module Test Board

Evaluation kit contains IRIS Module, EV Board, S/W and developer's document to support users for developing its application conveniently.



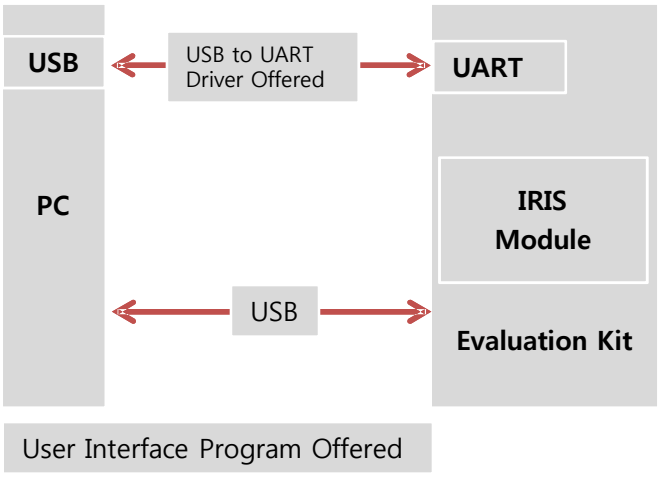
Features

- More than 200 pixels, IRIS Data available
- Setting iris authentication threshold
- Transmission of Stored Data from RAM to Flash Memory
- Transmission of Command Set
- Communication Port: USB. UART
- LCD Monochrome Panel (3.2 inch)

Module Kit Components

M150/IM10 | EV Board | Manual | SDK (CD)

EV Kit Test Configuration



Accessories

Hardware	
Cable & Power	USB Port, UART Port
	USB to UART Converter
	Power Adapter(+5V)
Software	
SDK & Utility	IRIS Module, SDK, PC User Interface Program The command set defined by the protocol manual is visible via command line tool with the protocol manual and see the data exchanged by the PC and module through the monitor
Technical Documents	
Layout & Size	IRIS Module Layout& Size Document Offered
Manual	Protocol Manual IRIS Module SDK Manual Evaluation Kit User's Manual

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PASS 5050 SERIES

Iris Recognition Access Controller-5050A

PASS 5050A

ECU-1000

Features

- **State-of-the-Art Optical Design**
  Optimized Iris Image and Fast Shutter Speed
- **ISO/IEC Standard**
  ISO 19794-6 Iris Image Standard
- **Automatic Height Adjustment**
  Offering automatic iris capture according to user's height(Auto Tilt)
- **Easy Enrollment/Authentication**
  Automatic Distance Indicator (LED R.G.B Lamps)
- **Extended Recognition Distance**
  Easy Enrollment and Authentication with Extension of Iris Recognition Distance to 30cm
- **High Recognition Speed**
  Capturing iris image with high speed (30 frame/sec)
- **Face Image Capture**
  Face Image Capture once IRIS Enrollment and Authentication

| PASS 5050 A |

PASS 5050 A is iris recognition access controller which enrolls and authenticates two eyes simultaneously to the exact. As non-contact type, iris recognition technology brings the higher security and convenience than contact-type biometrics. Further, it is suitable for various solutions and applications.

Automatically adjusting users' height, PASS 5050 A is available to capture both eyes and face at once and make users enroll and authenticate easily and conveniently with LED(R.G.B) auto distance indicator function.

Followed on International Standard(ISO19794-6), PASS 5050 A has applied high quality iris image processing and superior iris algorithm.

PASS 5050 SERIES

Iris Recognition Access Controller-5050A

Functions

- State-of-the-Art Optical Design
- ISO 19794-6 IRIS Standard-Compliant
- Contactless clean and easy-to-use capturing
- Compatible with other company's products
- User-friendly Interface
- Automatic Height Adjustment
- Quick and easy two eyes capturing (30 frame/1sec)
- Easy Installation and Management Support
- Multiple Access Control and Time & Attendance available by integrating with ECU

Application

- Access Control/ Time & Attendance Management for Corporate Building, Factory
- Access Control for Financial Institute, Hotel, Military Security Facility, Office etc
- Access control for Critical facilities: Institutes, Data Center etc
- Access control for Residential Area and Apartment
- Employee Management for Construction Sites

Specification

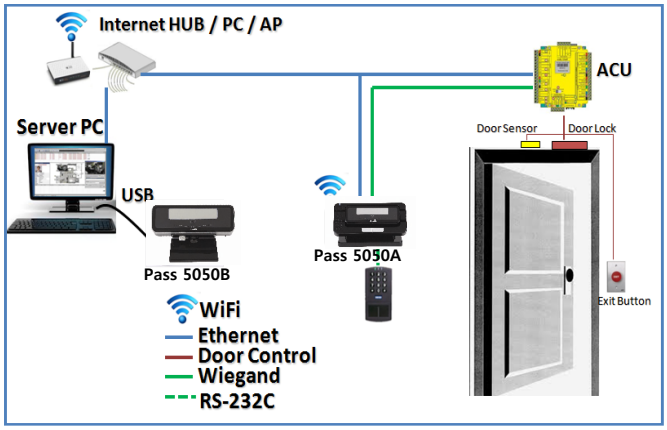
Recognition Distance	31.5cm~34.5cm (12.4 to 13.6 inches)
Iris Image Pixel Resolution	Average 240 pixels 11.5mm diameter iris
1:1 Verification Time	Less than 1 sec.
1:N Identification Time	Less than 1 sec. (5,000 templates) It is subject to be changed according to system specification.
Iris Template Size	1 K bytes/Two Eyes

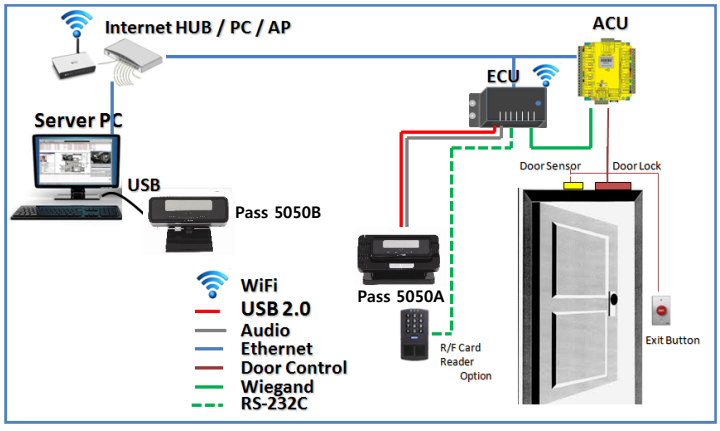
ECU-1000

Processor	Intel® Dual-Core Atom 1.8 GHz
OS	Embedded XP
1:N Identification Time	Less than 1 sec.(5,000 templates)
Iris Template Size	1 K bytes/Two Eyes
System Memory	16G Flash Memory, DDR3 2G
Maximum Users (1:N)	5,000 users
Interface	Lan 2 port, RS-232/422/485, USB, GPIO,
Sound	Mono Speaker, Buzzer
Power Support	DC 12V @ 5A
Temperature	- 0˚C ~ 60˚C

※ *This specification is subject to be changed without prior notice .*

System Configuration





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PASS 5050 SERIES

Iris Capture Scanner– 5050B,5050C

PASS 5050B

PASS 5050C

Features

- **State-of-the-Art Optical Design**
  Optimized Iris Image and Fast Shutter Speed
- **ISO/IEC Standard**
  ISO 19794-6 Iris Image Standard
- **Enrollment and Authentication outside available**
  Housing which is used outside available
- **Easy Enrollment/Authentication**
  Automatic Distance Indicator (LED R.G.B Lamps)
- **Extended Recognition Distance**
  Easy Enrollment and Authentication with Extension of Iris Recognition Distance to 30cm
- **High Recognition Speed**
  Capturing iris image with high speed (30 frame/sec)
- **Face Image Capture**
  Face Image Capture once IRIS Enrollment and Authentication

| PASS 5050 B/C |

PASS 5050 B/C is iris capture scanner which enrolls and authenticates two eyes simultaneously to the exact. As non-contact type, Iris recognition technology brings the higher security and convenience than contact-type biometrics. Further, PASSS 5050B/C is suitable for various solutions and applications.

PASS 5050 B/C is available to capture both eyes and face at once and make users enroll and authenticate easily and conveniently with LED(R.G.B) auto distance indicator function.

Followed on International Standard(ISO19794-6), PASS 5050 B/C has applied high quality iris image processing and superior iris algorithm. Especially, PASS 5050C is available le to enroll and capture iris image at outdoor.

PASS 5050 SERIES

Iris Capture Scanner-5050B, 5050C

Functions

- State-of-the-Art Optical Design
- ISO 19794-6 IRIS Standard-Compliant
- Contactless clean and easy-to-use capturing
- Compatible with other company's products
- User-friendly Interface
- Automatic Height Adjustment
- Quick and easy two eyes capturing (30 frame/1sec)
- Easy Installation and Management Support
- Enrollment and Authentication outside available
– SDK supportable

Application

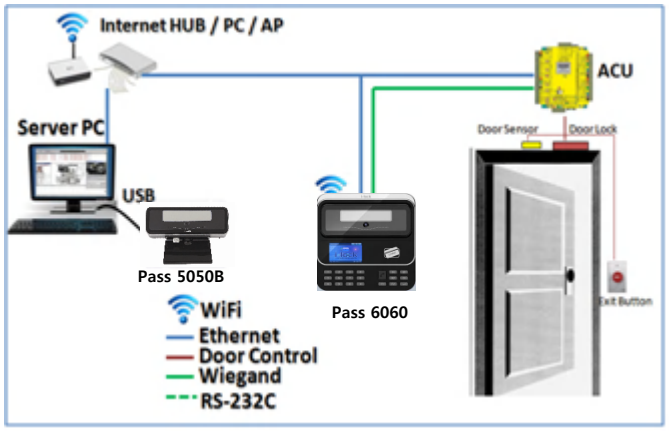
- Access Control for Financial Institute, Hotel, Military Security Facility, Office etc
– Access Control for Lab, Data Center etc
– Time and Attendance for Schools
- E-government(E-Civil ID, Border Security, Public Official ID, Medical Insurance)
– Identification to get document for public office

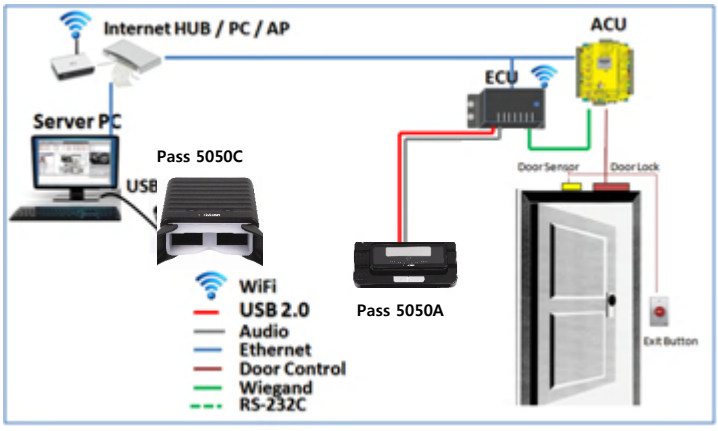
Specification

Item	Pass 5050 B	Pass 5050 C
Image output	Meets ISO 19794-6 ; exceeds 4.0 lp/mm @ > 60% contrast	
Iris image pixel resolution	640 x 480 pixels, 8 bits Supports multiple formats	
Operational iris imaging distance (stand-off range)	31.5 cm to 34.5 cm (12.4 to 13.6 inches)	0 to 10mm (0.0 to 0.4 inches)
Subject positioning LED indicators	Blue: Subject too far away Red: Subject is too close Green: Subject within capture volume	White: Image capture in progress
Operating temperature range	0 to 40C	
Eye safety standard	IEC 62471	IEC 62471, IEC 60825-1
Interface	USB 2.0 High Speed	
Power	Independent power supply require : 2,000 mA at 5.0 V (supplied with system)	USB 2.0 (500 mA at 5V) No additional power required
PC hardware and OS requirements	Intel Atom or above processor Windows XP 32 bit or above Linux OS version of SDK and drivers in progress	
Other certifications	CE, FCC, RoHS, WHQL	

※ This specification is subject to be changed without prior notice .

System Configuration





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PASS IRIS SERIES

Iris Recognition Access Controller

PASS Iris T

PASS Iris O

Features

- **ISO/IEC Standard**
  ISO 19794-6 Iris Image Standard
- **Automatic Height Adjustment**
  Offering automatic iris capture according to user's height(Auto Tilt)
- **Easy Enrollment/Authentication**
  Automatic Distance Indicator (LED R.G.B Lamps)
- **Extended Recognition Distance**
  Easy Enrollment and Authentication with Extension of Iris Recognition Distance to 30cm
- **Smart Phone App.**
  Access Control and Time & Attendance Management App. supportable(Android)
- **Face Image Capture**
  Face Image Capture once IRIS Enrollment and Authentication
- **POE(Power over Ethernet)**
  Simplify wiring and reduce installation cost

| PASS IRIS SERIES |

PASS IRIS is iris recognition access controller which enrolls and authenticates two eyes/one eye simultaneously to the exact. As non-contact type, iris recognition technology brings the higher security and convenience than contact-type biometrics. Further, it is suitable for various solutions and applications.

Automatically adjusting users' height, PASS IRIS is available to capture both eyes and face at once and make users enroll and authenticate easily and conveniently with LED(R.G.B) auto distance indicator function.

Followed on International Standard(ISO19794-6), PASS IRIS has applied high quality iris image processing and superior iris algorithm.

PASS IRIS SERIES

Iris Recognition Access Controller

Functions

- State-of-the-Art Optical Design
- ISO 19794-6 IRIS Standard-Compliant
- Contactless clean and easy-to-use capturing
- Compatible with other company's products
- User-friendly Interface
- Automatic Height Adjustment
- Quick and easy two eyes capturing (30 frame/1sec)
- POE Type Power Supply
- Smart Phone App. supportable

Application

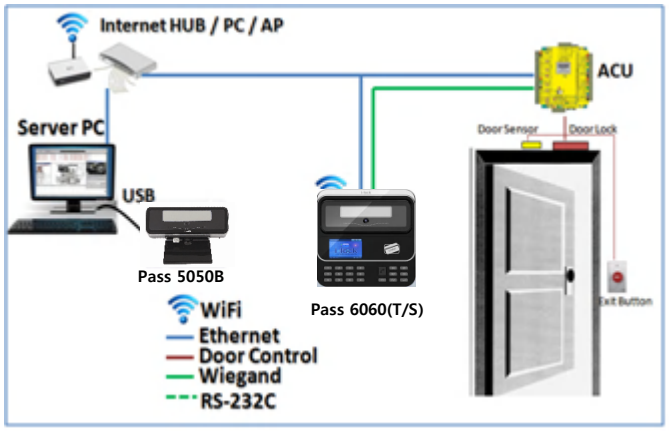
- Access Control/ Time & Attendance Management for Corporate Building, Factory
- Access Control for Financial Institute, Hotel, Military Security Facility, Office etc
- Access control for Critical facilities: Institutes, Data Center etc
- Access control for Residential Area and Apartment
- Employee Management for Construction Sites

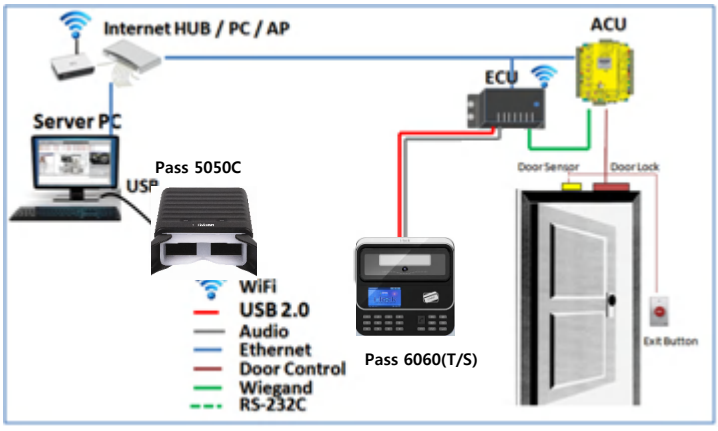
Specification

Recognition Distance	31.5cm~34.5cm(12.4 to 13.6 inches)
Iris Image Pixel Resolution	Average 240 pixels 11.5mm diameter iris
1:1 Verification Time	Less than 1 sec.
1:N Identification Time	Less than 1 sec. (5,000 templates) It is subject to be changed according to system specification.
Iris Template Size	1 K bytes/Two Eyes
System Memory	8G Flash Memory, 1G DDR DRAM
Maximum Users	5,000 users
Processor	ARM Cortex A9
Interface	Ethernet, (WiFi), USB, Wiegand, RS-422, RS-232, Relay, GPIO
LCD	2.5 inch color LCD
Support Card	13.56 MHZ Smart Card SAM card socket embedded/NFC (option)
Extension Memory	Micro-SD Card
Tamper	Switch
Power Supply	DC 12V
Relay	Motor Lock, EM/Strike/Deadbolt Lock
Proximity Sensor	Trigger Image Capture
POE	Available

※ *This specification is subject to be changed without prior notice .*

System Configuration





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PASS FACE

Face Recognition Access Controller

Features

- **Face Recognition Technology**
  Face Recognition Technology Access control and Time & Attendance Management
- **Accurate and Fast Authentication**
  Fast and accurately authenticated with dual camera and IR LED. Available to recognize at day/night time
- **Auto-update Function**
  Keep updating according to users' hair style, skin color and age change
- **Optimized for Illumination Environment**
  Improved facial recognition rate which can be changed per illumination environment by using IR sensor
- **Multiple Authentication Method**
  Face, RFID, Password, Face + RFID, Face + Password
- **Data Backup**
  Data Download/Upload using USB
- **Cost Effective**
  Provide advanced access control system with reasonable price
  Set up convenient and high level security

| PASS FACE |

PASS FACE is the up-to-date device that has face recognition algorithm with powerful DSP processor. Authentication is available at both of day and night time through minimizing illumination change.

Multiple authentication method is suitable for each user. (Face, RFID, Password, Face + RFID, Face +Password). Further, Auto-update of face information function according to user's skin color, and age change is provided.

Patented "multiple illumination face recognition " technology, enables extracting user's face features exactly. In addition, with touch screen based GUI, USB upload/download ,web based management, multiple recognition method T&A program functions, it provides convenient and efficient solution.

PASS FACE

Face Recognition Access Controller

Functions

- Excellent Face Recognition Algorithm
- Optimized for Illumination Change
- Optimized for authentication in various environment
- Face Recognition Auto-Update Function
- Product Stabilization by using outstanding DSP
- User friendly UI
- Various Interface
- Multiple Recognition Method

Application

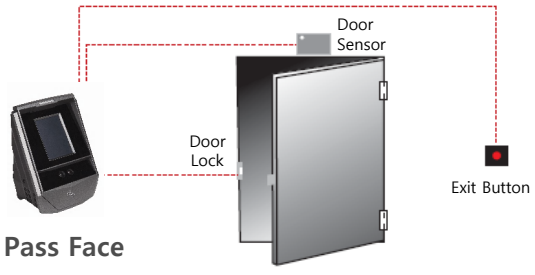
- Access Control/ Time & Attendance Management for Corporate Building, Factory
- Access Control for Financial Institute, Hotel, Military Security Facility, Office etc
- Access control for Critical facilities: Institutes, Data Center etc
- Access control for Residential Area and Apartment
- Employee Management for Construction Sites

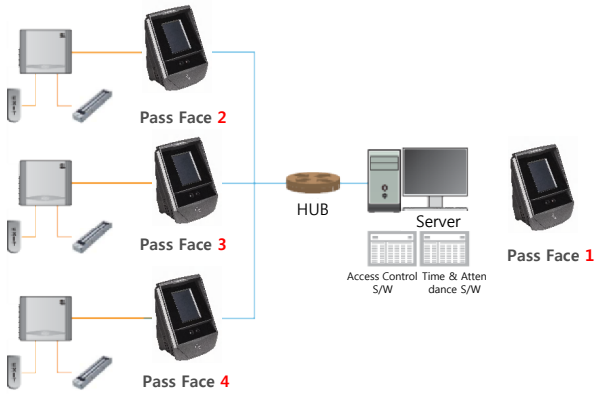
Specification

Camera	Dual-camera
Authentication Method	Face, RFID, Password, Face + RFID, Face + Password
Maximum Users	1,000
Face Recognition Angle	Level: ±20°, Vertical: ±20°
Face Recognition Distance	30~80cm
Built-in Card Reader	RF(EM/Mifare) *optional*
Communication Interface	RS485, TCP/IP, USB, Local video monitor
Management Function	Web Server Function Supported
Operating Environment	Illumination : 0-20,000LUX Water Proof Class 3 Dust Proof Class 6
Operating Temperature	-20~55℃
Size (W x H x D)	138×180×92 mm

※ *This specification is subject to be changed without prior notice .*

System Configuration





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PASS FP

Fingerprint Recognition Access Controller

Features

- **Internal Office Telephone**
  Terminal has internal office telephone function. You can dial to extension.
- **USB Memory Slot**
  User Information & Log Data Up/Down Load
- **Touch Keypad**
  Touch Keypad with Backlight
- **Auto-on Function**
  Automatically activated once finger placed on sensor
- **Multiple Authentication Method**
  Fingerprint, RFID, Password, Fingerprint + RFID, Fingerprint + Password
- **Voice Message**
  Informs terminal status & user guide
- **Function Key**
  Various Functions available using F1~F4 keys

| PASS FP(FingerPrint) |

PASS FP is cutting edge fingerprint recognition access controller by applying excellent recognition algorithm.
It supports various authentication method(Fingerprint, RFID, Password, Fingerprint+RFID, Fingerprint+Password) which can be chosen to be suitable for each user. Further, it boasts high matching speed, swift response, superior authentication speed and low error rate and offers a variety of interface such as RS485, Wiegand.
With touch screen based GUI, USB upload/download ,web based management, multiple recognition method T&A program functions, it provides convenient and efficient solution.

PASS FP

Fingerprint Recognition Access Controller

Functions

- Excellent Fingerprint Algorithm
- Product Stabilization by using outstanding DSP
- User friendly UI
- Various Interface offered
- Various Authentication Method
- Multiple Language supported
- SAM Card Socket embedded
- Access Control & T&A Program

Application

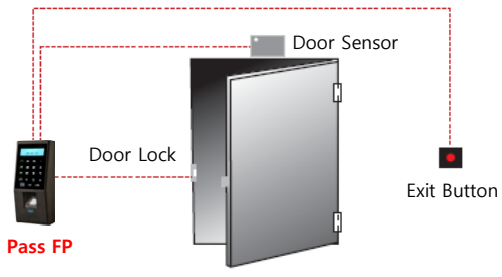
- Access Control/ Time & Attendance Management for Corporate Building, Factory
- Access Control for Financial Institute, Hotel, Military Security Facility, Office etc
- Access control for Critical facilities: Institutes, Data Center etc
- Access control for Residential Area and Apartment
- Employee Management for Construction Sites

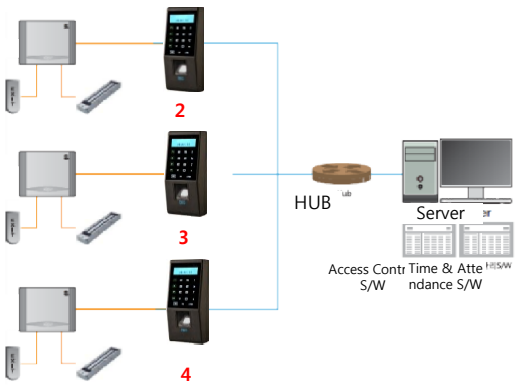
Specification

CPU	32 Bit/400MHz
Memory	16 MB DRAM/ 8MB Flash
Authentication Method	Fingerprint, RFID, Password, Fingerprint+RFID, Fingerprint+Password
Template Capacity	Maximum 6,000
1:1 Verification Time	< 1 sec
1:N Identification Time	< 2 sec (4,000Templates)
Log Capacity	200,000 logs
Communication	TCP/IP, Wiegand, Out RS485
Relay	Deadbolt, EM Lock, Strike, Automatic Door
Operating Temperature/Humidity	-20˚C ~ 60˚C / <Humidity 90%
ETC	Internal Office Telephone, USB Memory Slot

※ *This specification is subject to be changed without prior notice .*

System Configuration





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ATC 3200

Access Control Unit

Features

- **TCP/IP Main Controller adopted RTOS based on embedded Linux**
  - Stable Operation via Network
  - Efficient Data Transmission
  - Reliability by using FTP Transmission
- **System Management via Network (WAN, LAN, Internet)**
  - Checking out system management and managing easily
  - Convenient System Upgrade
- **Various Card Reader Interface**
  S-485, RS-232, Wiegand communication Interface, M/S, RF, RF/IC, Biometrics Reader
- **Battery Backup System in case of Blackout**
  System operation available once power outage occurred
- **Optimized for setting up multi functional card system**
  -Entry, T&A, Attendance, Parking etc,
  -High Stability of Segmentalized Code Management
- **Mounted Type on 19 inch Standard Rack**
  Mounting available on 19inch standard rack

| ATC-3200|

ATC-3200 is access controller of advanced ubiquitous concept which is available to mount on 19 inch standard rack. Main controller can control maxim 16 sub slots and maximum 32 card readers can be connected.

Not only real time event transmission/reception but also remote monitoring function is available. Further, with remote monitoring function, it can check out status of reader and event. Through integrating with various sensor, it can manage both of small and big system.

ATC-3200 maximizes user convenience by integrating with operating program which is able to output event report schedule and control each gate & employee.

ATC 3200

Access Control Unit

Functions

- Mounting available on 19 inch Standard Rack
- Extension available from min. 2 channels to max. 32 channels
-Storage Capacity: 1,000,000 ID Data & 1,000,000 Events
-Various Communication Method: TCP/IP, USB, RS-485
- Connection available to IC, RF, Biometrics Terminals
- Suitable for integrated security system(Access control, T&A management, Cafeteria etc,)
- Prevention of hacking by adopting encryption technology of network communication
- Fast Data Processing Speed
- Integration with Fire System

Application

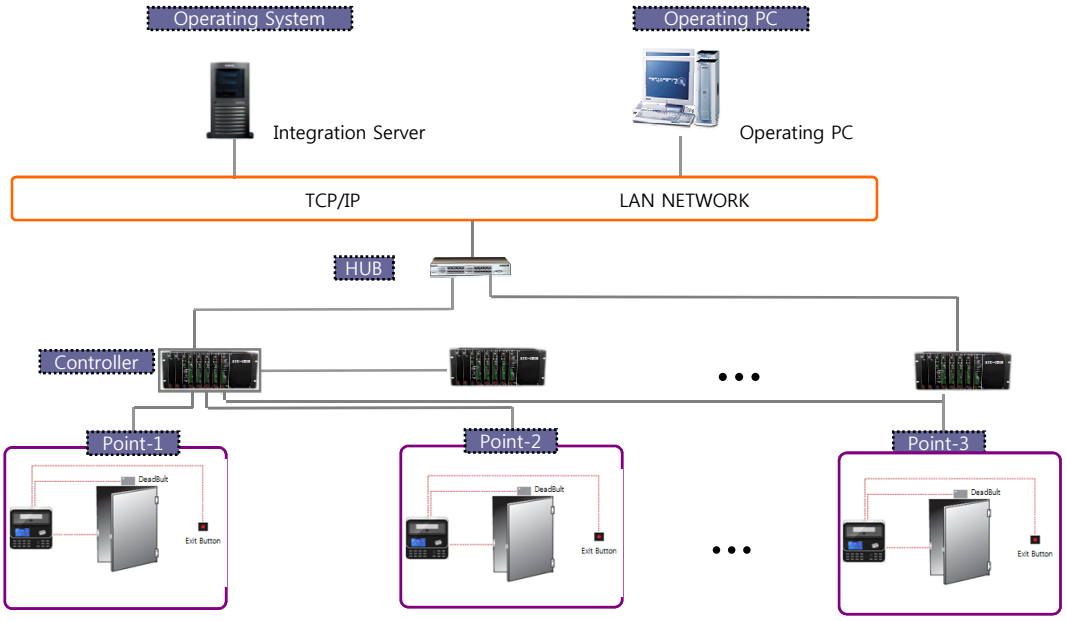
-Access control/Time & Attendance Management, Overtime Work Management, Hospital Management
- Meal Expense Management, Patrol Workforce Management etc,

Specification

CPU	S5PV210(32bit ARM Cortex-A8(1GHz)
Memory	512MB NAND flash, 256MB mDDR2 RAM
Fire Input	1 Port
Sub Slot	8~ 16 ea
Card Reader	2 Reader standard/ up to 32 Reader s available
Output Relay	2 ea / Slot 2A, 28VDC / 1A, 125VAC
Input Port	4 ea / Slot 15V Pull-up Photo Coupler
Interface	TCP/IP, USB, RS485
Event buffer	Up to 1,000,000
ID Master	Up to 1,000,000
Operating temperature	-40℃~80℃
Power supply input	Input 100~240VAC/5A Output DC15V/20A SMPS
Back-up Battery	12V, 18AH((2-3 hours stand-by)
Size	483x135x 395mm (W x H x D)

※ *This specification is subject to be changed without prior notice .*

System Configuration



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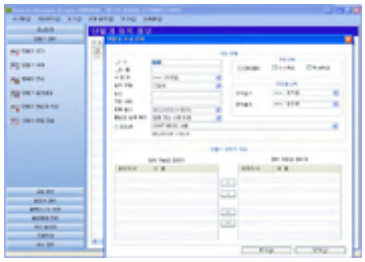
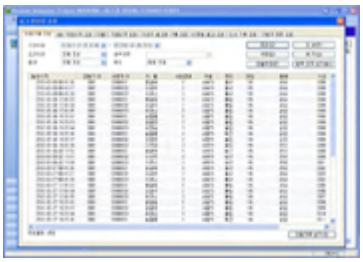
ACCESS CONTROL ,T&A S/W

Access Control/ Time & Attendance

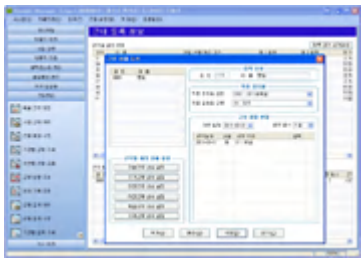
[User Management]



[Terminal Management]



[Log-on Management]



[Shift Pattern Enrollment]

[Daily management]

[Smartphone App Management]

Features

- **Integrated GUI with Access Control & T&A Function**
  - Provide user friendly UI
  - Access Control & T&A Function supportable
- **Precise Access Control Management**
  Visitor and Work Performance Management, Worker Grade Management, Easy Visitor Control
- **Managing numerous terminals via one server**
- **Operation Cos/ Expense Reduction**
  -The number of Patrols and Facility Management Cost Cut-down
  - Efficient use of wok time and increasing reliability
- **Through classifying individual and department, periodical searching available**
  -Entry, T&A, Attendance, Parking etc,
  -High Stability of Segmentalized Code Management
- **Smartphone Application**
  User Registration and Searching via Smart Phone

| I-works|

I-works is an Access Control and Time & Attendance system which is available to protect property and information in offices, buildings, factories, critical areas by controlling unnecessary entry, manage visitor's records integrating with iris, fingerprint, face and RF card readers and Time & Attendance status of visitors.

Further, it thoroughly controls area by accepting or rejecting entry via central controller. It applies from a small scale of access control and T&A to a big scale of total security system and provides high security, convenient installation & management and integrating with other system easily.